

Amendments to Claims

The following listing of claims will replace all prior versions and listings of claims in the pending application.

Claim Listing

1. (Amended) A method for producing nitrogen trifluoride by contacting a fused ammonium fluoride salt with a fluorine gas comprising:

forming a stream of micro droplets of the fused ammonium fluoride salt by a rapid ejection of the fused ammonium fluoride salt in a reactor through a nozzle;

circulating the fused ammonium fluoride salt from a lower portion to an upper portion of said reactor; and

contacting within said stream of micro droplets ~~[[of]]~~ the fused ammonium fluoride salt with the fluorine gas, the fluorine gas being sucked in said reactor through a suction pipe for fluorine gas by a negative pressure, said negative pressure being formed around said nozzle due to said rapid ejection of the fused ammonium fluoride salt.

2. (Previously presented) The method for producing nitrogen trifluoride according to claim 1, further comprising the step of:

periodically or intermittently isolating the fluorine gas and sucking an ammonia gas in said reactor to reproduce the fused ammonium fluoride salt through a contact of the ammonia gas with said stream, wherein a ratio of HF/NH_3 is maintained at a constant level.

3. (Previously presented) The method for producing nitrogen trifluoride according to claim 1, wherein the fluorine gas is introduced into said reactor through said suction pipe, the fluorine gas being diluted with mixed gases, said mixed gases having NF_3 in said reactor, the fluorine gas being introduced in said reactor by connecting said upper portion with said suction pipe using a tube.

4. (Previously presented) The method for producing nitrogen trifluoride according to claim 1, wherein a portion of the fused ammonium fluoride salt in said reactor is transferred to a second jet-loop reactor, said portion being rapidly ejected in said second jet-loop reactor through a second nozzle, said portion being circulated from a lower portion to an upper portion of said second jet-loop reactor, a stream of micro droplets of said portion being contacted with ammonia gas, said ammonium gas being sucked in said second jet-loop reactor by a negative pressure being formed around said second nozzle due to an ejection of the fused ammonium fluoride salt, wherein said portion and said ammonia gas continuously produce nitrogen trifluoride, continuously reproduce the fused ammonium fluoride salt and recycle the fused ammonium fluoride salt reproduced [into the] in said second jet-loop reactor for nitrogen trifluoride production.

5. (Previously presented) The method for producing nitrogen trifluoride according to claim 1, wherein said reactor has a jet ejector pipe having nozzles, each of said nozzles having a cross-sectional area and a throat having a throat cross sectional area, wherein a ratio of said throat cross section area to said cross section area is selected from the group consisting of 5, 25, 5 through 25, and any combinations thereof.

6. (Previously presented) The method for producing nitrogen trifluoride according to claim 1, wherein an ejecting linear velocity of the fused ammonium fluoride salt at said nozzle is about 2 meters/second through about 30 meters/second.

7. (Previously presented) The method for producing nitrogen trifluoride according to claim 1, wherein an ejecting linear velocity of the fused ammonium fluoride salt at said nozzle is about 5 meters/second through about 20 meters/second.

8. (Original) The method for producing nitrogen trifluoride according to claim 1, wherein the fused ammonium fluoride salt and the fluorine gas are contacted with each other at a temperature of about 100 degrees Celsius through about 150 degrees Celsius.

9. (Original) The method for producing nitrogen trifluoride according to claim 1, wherein the fused ammonium fluoride salt and the fluorine gas are contacted with each other at a temperature of about 110 degrees Celsius through about 130 degrees Celsius.

10. (Original) The method for producing nitrogen trifluoride according to claim 2, wherein the fused ammonium fluoride salt and the ammonia gas are contacted with each other at a temperature of about 70 degrees Celsius through about 150 degrees Celsius.

11. (Original) The method for producing nitrogen trifluoride according to claim 4, wherein the fused ammonium fluoride salt and the ammonia gas are contacted with each other at a temperature of about 70 degrees Celsius through about 150 degrees Celsius.

12. (Original) The method for producing nitrogen trifluoride according to claim 2, wherein the fused ammonium fluoride salt and the ammonia gas are contacted with each other at a temperature of about 90 degrees Celsius through about 120 degrees Celsius.

13. (Original) The method for producing nitrogen trifluoride according to claim 4, wherein the fused ammonium fluoride salt and the ammonia gas are contacted with each other at a temperature of about 90 degrees Celsius through about 120.